CLAIM AMENDMENTS

1. (currently amended) (original) Method for measuring the polarization mode dispersion of an optical fiber applying an optical signal to a first end of the fiber [[(11)]] and coupling a second end of the fiber [[(111)]] to an interferometer [[(25)]], said method comprising the step of:

generating by means of said interferometer [[(25)]] at least one interferogram comprising at least a central peak and two side lobes having a determined information content; and being characterized by the steps of

processing said interferogram in such a way as to measure the information content of at least one of said two side lobes; and

determining the polarization mode dispersion of the fiber associating to said measurement of said information content a probability density function representative of the polarization mode dispersion [[(PMD)]] of the fiber in the form of differential group delay.

2. (currently amended) <u>The</u> method as claimed in claim 1 characterized in that said step of determining the polarization mode dispersion comprises the step of

computing the deconvolution of said at least one side lobe with said central peak so that said deconvolution corresponds

to the probability density of the differential group delay determined by the PMD of the fiber.

3. (currently amended) The method as claimed in claim 1 [[or 2]] characterized by the additional step of

determining an average of measurements of said information content whereto said probability density is to be associated.

4. (currently amended) The method as claimed ~~in any of the previous claims~~ claim 1, characterized in that said information content comprises a single numeric value determined by the position of said at least one side lobe in the interferogram.

5. (currently amended) The method as claimed in ~~claims 1 through 3~~ claim 1 characterized in that said information content comprises a plurality of values determined by the position of said at least one side lobe in the interferogram.

6. (currently amended) A computer product able to be directly loaded in the internal memory of an electronic measuring device and comprising portions of software code to implement the method as claimed in ~~any of the claims from 1 to 5~~ claim 1 when the product is run on said electronic device.

7. (currently amended) A system for measuring the polarization mode dispersion of an optical fiber, comprising

an optical source [[(21)]] able to generate an optical signal to be injected into the fiber [[(11)]] ;

an interferometer [[(25)]] associated to the fiber and able to generate an interferogram comprising at least a central peak and two side lobes having a determined information content; characterized by

a device [[(27)]] connected to said interferometer and able to

process said interferogram in such a way as to measure the information content of at least one of said side lobes; and

~~determining~~ determine the polarization mode dispersion of the fiber associating to said measurement of said information content a probability density function representative of the polarization mode dispersion [[(PMD)]] of the fiber in the form of differential group delay.

8. (currently amended) The system as claimed in claim 7, characterized in that said device [[(27)]] comprises

a first module able to compute the deconvolution of said at least one side lobe with said central peak so that said deconvolution corresponds to the probability density of the differential group delay determined by the PMD of the fiber.

9. (currently amended) The system as claimed in claim 7 [[or 8]], characterized in that said device comprises

a second module able to determine an average of measurements of said information content whereto said probability density is to be associated.

10. (currently amended) The device for measuring the polarization mode dispersion of an optical fiber into which optical signals have been injected, comprising

an opto-electronic module [[(37)]] able to convert the optical signals into electrical signals;

a display device [[(35)]] able to generate an interferogram comprising at least a central peak and two side lobes having a determined information content; characterized by

a control unit [[(30)]] able to

measure the information content of at least one of said two side lobes; and

~~determining~~ determine the polarization mode dispersion of the fiber associating to said measurement of said information content a probability density function representative of the polarization mode dispersion [[(PMD)]] of the fiber in the form of differential group delay.

11. (currently amended) The device as claimed in claim 10, characterized in that it comprises

a first program module able to compute the deconvolution of said at least a side lobe with said central peak so that said deconvolution corresponds to the probability density of the differential group delay determined by the PMD of the fiber.

12. (currently amended) The device as claimed in claim 10 [[or 11]], characterized in that it comprises

a second program module able to determine an average of measurements of said information content whereto said probability density is to be associated.